

CLAIMS

1. A data transmission method comprising the steps of performing encryption for information data included in a data packet having a data flag formed of a first combination of a plurality of inhibited codes that are not used as information codes representing information, the information data being formed without using the inhibited codes, so as not to generate the inhibited codes in order to generate encrypted information data that includes no inhibited codes; replacing the first combination of the plurality of inhibited codes in the data flag in the data packet with a second combination of the inhibited codes, the second combination being different from the first combination, to form an encrypted data packet that has the replaced data flag and that includes the encrypted information data; and transmitting the encrypted data packet.

2. The data transmission method according to Claim 1, wherein error correction data for the encrypted information data is generated along with the encrypted information data, and wherein the error correction data is incorporated in the encrypted data packet.

3. The data transmission method according to Claim 1,

wherein the data packet is included in each of a plurality of data sequences, and wherein the encrypted data packet based on the data packet is formed for every data sequence.

4. A data transmission method comprising the steps of performing encryption for information data included in a data packet having a data flag formed of a predetermined combination of a plurality of inhibited codes that are not used as information codes representing information, the information data being formed without using the inhibited codes, the data flag being followed by identification data that includes a first code other than the inhibited codes to represent a type of the information data, so as not to generate the inhibited codes in order to generate encrypted information data that includes no inhibited codes; replacing the first code included in the identification data in the data packet with a second code that is different from the first code and that is other than the inhibited codes to form an encrypted data packet that has the data flag followed by the replaced identification data and that includes the encrypted information data; and transmitting the encrypted data packet.

5. The data transmission method according to Claim 4, wherein error correction data for the encrypted information

data is generated along with the encrypted information data, and wherein the error correction data is incorporated in the encrypted data packet.

6. The data transmission method according to Claim 4, wherein the data packet is included in each of a plurality of data sequences, and wherein the encrypted data packet based on the data packet is formed for every data sequence.

7. A data transmission apparatus comprising:

an encryption processing unit configured to perform encryption for information data included in a data packet having a data flag formed of a first combination of a plurality of inhibited codes that are not used as information codes representing information, the information data being formed without using the inhibited codes, so as not to generate the inhibited codes in order to generate encrypted information data that includes no inhibited codes; an encrypted-data-packet forming unit configured to replace the first combination of the plurality of inhibited codes in the data flag in the data packet with a second combination of the inhibited codes, the second combination being different from the first combination, to form an encrypted data packet that has the replaced data flag and that includes the encrypted information data generated by the

encryption processing unit; and

a data transmitting unit configured to transmit the encrypted data packet formed by the encrypted-data-packet forming unit.

8. The data transmission apparatus according to Claim 7, wherein the encryption processing unit generates error correction data for the encrypted information data along with the generation of the encrypted information data, and wherein the encrypted-data-packet forming unit incorporates the error correction data generated by the encryption processing unit in the encrypted data packet.

9. The data transmission apparatus according to Claim 7, wherein the data packet is included in each of a plurality of data sequences, and wherein a plurality of combinations of the encryption processing unit and the encrypted-data-packet forming unit is provided corresponding to the plurality of data sequences.

10. A data transmission apparatus comprising:

an encryption processing unit configured to perform encryption for information data included in a data packet having a data flag formed of a predetermined combination of a plurality of inhibited codes that are not used as

information codes representing information, the information data being formed without using the reserved codes, the data flag being followed by identification data that includes a first code other than the reserved codes to represent a type of the information data, so as not to generate the inhibited codes in order to generate encrypted information data that does not use the inhibited codes;

an encrypted-data-packet forming unit configured to replace the first code included in the identification data in the data packet with a second code that is different from the first code and that is other than the reserved codes to form an encrypted data packet that has the data flag followed by the replaced identification data and that includes the encrypted information data generated by the encryption processing unit; and

a data transmitting unit configured to transmit the encrypted data packet formed by the encrypted-data-packet forming unit.

11. The data transmission apparatus according to Claim 10, wherein the encryption processing unit generates error correction data for the encrypted information data along with the generation of the encrypted information data, and wherein the encrypted-data-packet forming unit incorporates the error correction data generated by the encryption

processing unit in the encrypted data packet.

12. The data transmission apparatus according to Claim 10, wherein the data packet is included in each of a plurality of data sequences, and wherein a plurality of combinations of the encryption processing unit and the encrypted-data-packet forming unit is provided corresponding to the plurality of data sequences.

13. A data reception method comprising the steps of receiving encrypted data packet that is transmitted and that has a data flag formed of a second combination of a plurality of inhibited codes that are not used as information codes representing information, with which second combination of the inhibited codes a first combination of the inhibited codes is replaced, the second combination being different from the first combination, the encrypted data packet including encrypted information data that includes no reserved codes and that results from encryption performed for information data formed without using the inhibited codes so as not to generate the inhibited codes; performing decryption for the encrypted information data included in the encrypted data packet to generate reproduced information data; detecting the data flag included in the encrypted data packet; and extracting

the reproduced information data in accordance with a detection output resulting from the detection.

14. The data reception method according to Claim 13, wherein the encrypted data packet has the data flag and includes error correction data for the encrypted information data along with the encrypted information data, and wherein the error correction data included in the encrypted data packet is received to perform error correction for the encrypted information data by using the error correction data and the decryption is performed for the encrypted information data subjected to the error correction to generate the reproduced information data.

15. The data reception method according to Claim 13, wherein the encrypted data packet is included in each of a plurality of data sequences, and wherein, for every data sequence, the decryption is performed for the encrypted information data included in the encrypted data packet, the data flag included in the encrypted data packet is detected, and the reproduced information data is extracted.

16. A data reception method comprising the steps of receiving encrypted data packet that is transmitted, that has a data flag formed of a predetermined combination of a

plurality of inhibited codes that are not used as information codes representing information, and that includes encrypted information data resulting from encryption performed for information data formed without using the inhibited codes so as not to generate the inhibited codes and including no reserved codes, the data flag being followed by identification data that has a second code other than the inhibited codes, with which second code a first code that is other than the inhibited codes and that represents a type of the information data is replaced, the second code being different from the first code; performing decryption for the encrypted information data included in the encrypted data packet to generate reproduced information data; detecting the identification data included in the encrypted data packet; and extracting the reproduced information data in accordance with a detection output resulting from the detection.

17. The data reception method according to Claim 16, wherein the encrypted data packet has the data flag followed by the identification data and includes error correction data for the encrypted information data along with the encrypted information data, and wherein the error correction data included in the encrypted data packet is received to perform error correction for the encrypted information data



by using the error correction data and the decryption is performed for the encrypted information data subjected to the error correction to generate the reproduced information data.

18. The data reception method according to Claim 16, wherein the encrypted data packet is included in each of a plurality of data sequences, and wherein, for every data sequence, the decryption is performed for the encrypted information data included in the encrypted data packet, the identification data included in the encrypted data packet is detected, and the reproduced information data is extracted.

19. A data reception apparatus comprising:

a data-sequence reproducing unit configured to receive encrypted data packet that is transmitted and that has a data flag formed of a second combination of a plurality of inhibited codes that are not used as information codes representing information, with which second combination of the inhibited codes a first combination of the inhibited codes is replaced, the second combination being different from the first combination, the encrypted data packet including encrypted information data that includes no inhibited codes and that results from encryption performed for information data formed without using the inhibited

codes so as not to generate the inhibited codes;

a decryption processing unit configured to perform decryption for the encrypted information data included in the encrypted data packet received by the data-sequence reproducing unit to generate reproduced information data;

a data detecting unit configured to detect the data flag included in the encrypted data packet; and

a data selecting unit configured to extract the reproduced information data generated by the decryption processing unit in accordance with a detection output supplied from the data detecting unit.

20. The data reception apparatus according to Claim 19, wherein the encrypted data packet has the data flag and includes error correction data for the encrypted information data along with the encrypted information data, and wherein the decryption processing unit receives the error correction data included in the encrypted data packet to perform error correction for the encrypted information data by using the error correction data and the decryption is performed for the encrypted information data subjected to the error correction to generate the reproduced information data.

21. The data reception apparatus according to Claim 19, wherein the encrypted data packet is included in each of a

plurality of data sequences, and wherein a plurality of combinations of the decryption processing unit, the data detecting unit, and the data selecting unit is provided corresponding to the plurality of data sequences.

22. A data reception apparatus comprising:

a data-sequence reproducing unit configured to receive encrypted data packet that is transmitted, that has a data flag formed of a predetermined combination of a plurality of inhibited codes that are not used as information codes representing information, and that includes encrypted information data resulting from encryption performed for information data formed without using the inhibited codes so as not to generate the inhibited codes and including no inhibited codes, the data flag being followed by identification data that has a second code other than the inhibited codes, with which second code a first code that is other than the inhibited codes and that represents a type of the information data is replaced, the second code being different from the first code;

a decryption processing unit configured to perform decryption for the encrypted information data included in the encrypted data packet received by the data-sequence reproducing unit to generate reproduced information data;

a data detecting unit configured to detect the

identification data included in the encrypted data packet;  
and

a data selecting unit configured to extract the reproduced information data generated by the decryption processing unit in accordance with a detection output supplied from the data detecting unit.

23. The data reception apparatus according to Claim 22, wherein the encrypted data packet has the data flag followed by the identification data and includes error correction data for the encrypted information data along with the encrypted information data, and wherein the decryption processing unit receives the error correction data included in the encrypted data packet to perform error correction for the encrypted information data by using the error correction data and the decryption is performed for the encrypted information data subjected to the error correction to generate the reproduced information data.

24. The data reception apparatus according to Claim 19, wherein the encrypted data packet is included in each of a plurality of data sequences, and wherein a plurality of combinations of the decryption processing unit, the data detecting unit, and the data selecting unit is provided corresponding to the plurality of data sequences.